



# CIVIL-TECH CONSULTANTS AND ENGINEERS

Building & Highway Material Testing Laboratory

An ISO 9001:2008 Certified Company



Job No.: CTCE/BBMP/WNo.10/AG/WMM/Gradation/2012-13

21.03.2013



## GRADATION FOR WMM MORTH TABLE-400-11

**Client** : Asst. Executive Engineer, Vidyaranyapura Sub Division, BBMP, Bangalore.

**Agency** : Mr. A. Govindan, Contractor, Bangalore.

**Name of Work** : Providing metalling asphaltting to 4th Block Doddabommasandra and surrounding roads of Venugopalaswamy Temple in Ward No. 10, BBMP, Bangalore.

**Reference** : AEE/VP/WO/259/2012-13 Dated: 18.03.2013

**Date of Testing** : 21.03.2013

**Sample Location** : WMM Mix Plant

**Oven Dry Wt (gm):** 25730

| Is Sieve Size in mm | Weight Retained (gm) | Cumulative Weight Retained (gm) | Cumulative % of Retained | Cumulative % of Passing | Spec.Limits |
|---------------------|----------------------|---------------------------------|--------------------------|-------------------------|-------------|
| 53                  | 0                    | 0                               | 0                        | 100                     | 100         |
| 45                  | 735                  | 735                             | 2.9                      | 97.1                    | 95-100      |
| 22.4                | 6470                 | 7205                            | 28.0                     | 72.0                    | 60-80       |
| 11.2                | 4876                 | 12081                           | 47.0                     | 53.0                    | 40-60       |
| 4.75                | 3792                 | 15873                           | 61.7                     | 38.3                    | 25-40       |
| 2.36                | 3335                 | 19208                           | 74.7                     | 25.3                    | 15-30       |
| 0.600               | 4221                 | 23429                           | 91.1                     | 8.9                     | 8-22        |
| 0.075               | 2016                 | 25445                           | 98.9                     | 1.1                     | 0-8         |

### Note:

1. The report shall not be reproduced, except in full, without the written approval of the laboratory.
2. The results indicated above are based on the tests carried out on the samples received in the laboratory.
3. Any Query regarding the report must be reported within 15 days from the date of testing.



  
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Job No.: CTCE/BBMP/WNo.10/AG/SDBC/Bitumen/2012-13

23.03.2013

## BITUMEN CONTENT AND GRADATION DETERMINATION OF SEMI DENSE BITUMINOUS CONCRETE MIX

### AASHTO T 164 & AASHTO T 30

|                  |                                                                                                                                                |
|------------------|------------------------------------------------------------------------------------------------------------------------------------------------|
| CLIENT           | Asst. Executive Engineer, Vidyananyapura Sub Division, BBMP, Bangalore.                                                                        |
| AGENCY           | Mr. A. Govindan, Contractor, Bangalore.                                                                                                        |
| NAME OF THE WORK | Providing metalling asphaltting to 4th Block Doddabommasandra and surrounding roads of Venugopalaswamy Temple in Ward No. 10, BBMP, Bangalore. |
| REFERENCE        | AEE/VP/WO/259/2012-13 Dated: 18.03.2013                                                                                                        |
| SAMPLE I/D       | Roads in 4th Block Doddabommasandra & Venugopalaswamy Temple                                                                                   |
| DATE OF TESTING  | 23.03.2013                                                                                                                                     |

### BITUMEN CONTENT DETERMINATION

| Description                                          | Trail 1 | Trail 2 |
|------------------------------------------------------|---------|---------|
| 1. Weight of Mixture before Test, g                  | 500     | 500     |
| 2. Weight of Mixture after Test, g                   | 474     | 475     |
| 3. Weight of Asphalt and Mineral matter Extracted, g | -       | -       |
| 4. Weight of Mineral Matter, g.                      | -       | -       |
| 5. Weight of Ash, g                                  |         |         |
| 6. Weight of Bitumen Extracted, g. (corrected)       | 26      | 25.00   |
| 7. Bitumen content in %                              | 5.20    | 5.00    |
| 8. Average                                           | 5.10    |         |

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| DATE OF TESTING  | 23.03.2013                                                                                                                                     |

### GRADATION AFTER EXTRACTION

| SIEVE SIZE | Trail 1             |            |                       |           | JOB MIX   |
|------------|---------------------|------------|-----------------------|-----------|-----------|
| mm         | Weight Retained, gm | % Retained | % Cumulative Retained | % Passing | Gradation |
| 13.2       | 0                   | 0          | 0                     | 100       | 100       |
| 9.5        | 23.78               | 5.02       | 5.02                  | 94.98     | 90-100    |
| 4.75       | 252.64              | 53.30      | 58.32                 | 41.68     | 35-51     |
| 2.36       | 51.42               | 10.85      | 69.16                 | 30.84     | 24-39     |
| 1.18       | 48.73               | 10.28      | 79.45                 | 20.55     | 15-30     |
| 0.3        | 42.16               | 8.89       | 88.34                 | 11.66     | 9-19      |
| 0.075      | 33.28               | 7.02       | 95.36                 | 4.64      | 3-8       |

| SIEVE SIZE | Trail 2             |            |                       |           | JOB MIX   |
|------------|---------------------|------------|-----------------------|-----------|-----------|
| mm         | Weight Retained, gm | % Retained | % Cumulative Retained | % Passing | Gradation |
| 13.2       | 0                   | 0          | 0                     | 100       | 100       |
| 9.5        | 22.58               | 4.75       | 4.75                  | 95.25     | 90-100    |
| 4.75       | 242.19              | 50.99      | 55.74                 | 44.26     | 35-51     |
| 2.36       | 57.49               | 12.10      | 67.84                 | 32.16     | 24-39     |
| 1.18       | 54.13               | 11.40      | 79.24                 | 20.76     | 15-30     |
| 0.3        | 48.25               | 10.16      | 89.40                 | 10.60     | 9-19      |
| 0.075      | 24.12               | 5.08       | 94.48                 | 5.52      | 3-8       |

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*(Signature)*  
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